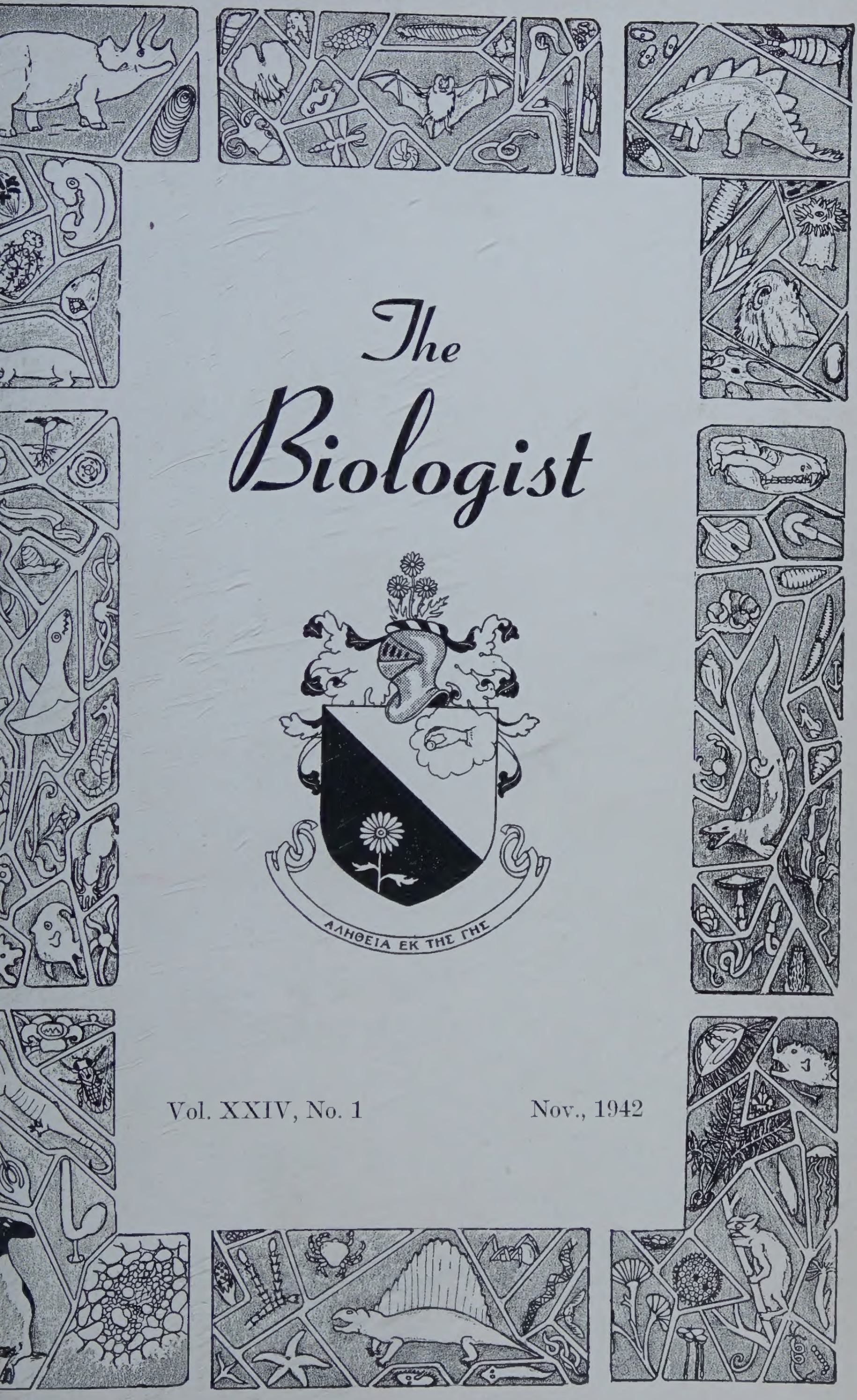

The Biologist

ΑΛΗΘΕΙΑ ΕΚ ΤΗΣ ΓΗΣ

Vol. XXIV, No. 1 Nov., 1942

Phi Sigma

BIOLOGICAL HONOR SOCIETY

"The object of Phi Sigma is to promote interest in biological research. Although originally designated as an honorary biological research society, it should not be considered as a working guild of biologists interested in research. In effect, election to Phi Sigma should be an opportunity for better work, rather than merely election to an honorary society."

Mile Posts:

1915	March 17, Alpha Chapter organized, Ohio State University, Columbus.
1916	May, Central Governing Body organized, BIOLOGIST first issued.
1917	June, last War-time BIOLOGIST issued.
1921	February, BIOLOGIST revived.
1924	December, First National Meeting, Constitution revised, Washington, D.C.
1925	December, Second National Meeting, First Science Program, Kansas City.
1926	December, Third National Meeting, Second Science Program, Philadelphia.
1927	December, Third Science Program, Nashville.
1928	December, Fourth National Meeting, Coat-of-Arms adopted, Fourth Science Program, New York.
1930	January, Council Meeting, Ritual Revised, Norman, Okla.
	December, Fifth National Meeting, Fifth Science Program, Cleveland.
1931	Phi Sigma Letters Registered, U. S. Patent Office.
1932	December, Sixth Science Program, Atlantic City.
1933	June, Sixth National Meeting, Seventh Science Program, Chicago.
1935	December, Seventh National Meeting, Eighth Science Program, St. Louis.
1937	December, Eighth National Meeting, Ninth Science Program, Indianapolis.
1939	December, Ninth National Meeting, Tenth Science Program, Silver Anniversary, Ohio State University, Columbus.
1942	December, Tenth National Meeting, Dallas, Texas.

Expansion:

The Constitution provides that: "An active chapter may be established in any institution of learning which requires for graduation the equivalent of four years of collegiate work, and which is equipped with facilities for research work. - - - - Any petitioning group must be active for at least one year before it may be granted a charter."

THE BIOLOGIST

Vol. XXIV Denver, Colo., November, 1942 No. 1

Published by the Phi Sigma Society, an organization devoted to the promotion of interest in biological research, founded at Ohio State University, March 17, 1915. The Biologist is the official quarterly publication of the society, issued ordinarily in October, December, February and April, as a medium of exchange between chapters, as an interpreter of Council policies, and as a stimulus to the fellowship in science for which Phi Sigma stands.

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●

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Directory

OF ALL ACTIVE AND INACTIVE CHAPTERS

The list of chapter officers for this school year will be found in the CHAPTER NEWS section of Vol. XXIV, No. 1.

ALPHA
Ohio State University, Columbus, Ohio, founded March 17, 1915, (Inactive).

BETA
University of Michigan, Ann Arbor, Michigan, founded June 3, 1916.

DELTA
University of Maine, Orono, Maine, founded January 27, 1917, (Inactive).

EPSILON
University of Denver, Denver, Colorado, founded March 5, 1917.

ZETA
University of Wisconsin, Madison, Wisconsin, founded May 30, 1917.

ETA
University of Akron, Akron, Ohio, founded April 20, 1921.

THETA
Michigan State College, East Lansing, Michigan, founded April 9, 1921, (Inactive).

IOTA
Washington University, St. Louis, Missouri, founded May 28, 1921.

KAPPA
University of Kansas, Lawrence, Kansas, founded May 31, 1921.

LAMBDA
Montana State University, Missoula, Montana, founded May 4, 1921.

MU
University of California, Berkeley, California, founded April 27, 1922.

NU
Washington and Jefferson College, Washington, Pennsylvania, founded May 11, 1922.

XI
University of Nebraska, Lincoln, Nebraska, founded May 3, 1934, (Inactive).

OMICRON
University of North Dakota, Grand Forks, North Dakota,
founded May 26, 1924, (Inactive).

PI
Emory University, Georgia, founded January 3, 1925.

RHO
University of Illinois, Urbana, Illinois, founded March 28, 1925.

SIGMA
University of Florida, Gainesville, Florida, founded December 4, 1925.

TAU

Duke University, Durham, North Carolina, founded March 4, 1926.

UPSILON

Miami University, Oxford, Ohio, founded May 7, 1926.

PHI

University of New Hampshire, Durham, New Hampshire, founded May 21, 1926.

CHI

Montana State College, Bozeman, Montana, founded February 11, 1927.

PSI

University of Washington, Seattle, Washington, founded April 7, 1928.

OMEGA

University of Oklahoma, Norman, Oklahoma, founded March 24, 1928.

ALPHA ALPHA

University of Southern California, Los Angeles, California, founded May 17, 1930.

ALPHA BETA

Mount Union College, Alliance, Ohio, founded May 17, 1928.

ALPHA GAMMA

University of South Dakota, Vermillion, South Dakota, founded May 15, 1928, (Inactive).

ALPHA DELTA

Lawrence College, Appleton, Wisconsin, founded March 7, 1929, (Inactive).

ALPHA EPSILON

University of Pittsburgh, Pittsburgh, Pennsylvania, founded March 23, 1929.

ALPHA ZETA

College of William and Mary, Williamsburg, Virginia, founded April 19, 1930, (Inactive).

ALPHA ETA

Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, founded March 13, 1930.

ALPHA THETA

State College of Washington, Pullman, Washington, founded May, 1930.

ALPHA IOTA

Bucknell University, Lewisburg, Pennsylvania, founded January 9, 1932.

ALPHA KAPPA

Hunter College, New York City, founded January 8, 1932.

ALPHA LAMBDA

University of Utah, Salt Lake City, Utah, founded February 13, 1932.

ALPHA MU

University and State College of Oregon, Eugene-Portland-Corvallis, Oregon, founded November 18, 1933.

ALPHA NU

University of New Mexico, Albuquerque, New Mexico, founded April 21, 1935.

ALPHA XI

Rhode Island State College, Kingston, Rhode Island, founded May 17, 1935.

ALPHA OMICRON

Marquette University, Milwaukee, Wisconsin, founded June 18, 1938.

ALPHA PI

University of Colorado, Boulder, Colorado, founded May 24, 1941.

An Address of Welcome

MELVILLE H. HATCH

The Phi Sigma Society is a national biological society. You who are being inducted into membership in this organization have been selected not alone because of your superior scholarship but likewise because you have exhibited evidences of that curiosity concerning the ways of the world that is essential to scientific activity.

There are five ingredients that go to make a scientist:

The first is ability—that has come to you from your parents, in the chromosomes and genes which went into your making. Be not proud, but humble, if you find it within you.

The second is interest—that has come to you from your environment, your home, your school, your community. You are as little responsible for it as for your inheritance.

The third ingredient is industry. The great scholars and scientists of the world have worked. Ten, twelve, sixteen hours a day is none too long if you would beat those funeral drums the poet mentions in "Art is long, and time is fleeting." The great Faraday has said, "Without industry one may not hope to walk within the veil of the Temple of Nature."

The fourth ingredient in the making of a scientist is self-control. Without self-control you will forever be busy, but will never get anything done. You will always be starting researches without knuckling down to the drudgery of shaping them up into that final form in which they are ready for the printer. As you have benefited by the work of your predecessors and contemporaries, so it becomes to you a most solemn duty, backed by the most weighty ethical injunctions, to so act that others may similarly benefit by your labors.

The fifth and hardest is honesty—the honesty to judge one's self as critically as objectively, and as rigorously as one's fellows—the honesty to correct one's own mistakes as readily as one's colleagues—the honesty to recognize one's own prejudices and assumptions—the honesty to set things ahead of persons.

Ability is given to us by our parents, interest has come to us from our environment, but industry, self-control, and honesty—these we can strive for. Few of us are Newtons or Darwins. But each can contribute in his own measure to that intellectual adventure that is modern science. See that you do your share!

I, therefore, on behalf of the old members of this chapter, welcome you to the benefits and responsibilities of membership in our organization.

First—shall I mention it among the benefits?—may I hope that you get a real thrill when you come to wear your key? My own exhaltation, when first I went around with a Phi Sigma key, ranks almost with my first love affair—one of the real climaxes of my young life. I remember it yet! And then, after a couple of years, I lost the key. And it has gone unreplaced for these many years!

In welcoming you to Phi Sigma, I extend to you the hospitality of an expanding organization. Scarce twenty-five years old, it has grown from twenty chapters in 1928 to about thirty-one chapters in 1942.

From an inconsiderable excrescence on the surface of things biological Phi Sigma is growing until, I venture to predict, another decade or so will see our organization synonymous with American biology itself.

In welcoming you to Phi Sigma I welcome you to the pathways of biologists. I trust that you are prepared to enter thereon—that you have been driven hither by an irresistable inquisitiveness regarding living things. I trust that you realize that you will be miserable as anything else. Because, to paraphrase from Bertrand Russell, you are "in love with the world." Because you feel its strange beauty like a madness in the blood.

For that, despite all our rationalization, is the essence of the matter. The Aristotelians excused their concern with nature—nature was the revelation of a divine power. We excuse ours because a knowledge of it is a prerequisite to its manipulation in our behalf.

But let us be candid, at least among ourselves.

Ultimates, be they divine or human, are equally of no concern to us. Ours is the joy of knowing and of loving, of worshipping at the shrine of what, in the last analysis, may be mysterious and utterly inexplicable.

So conceived, biology will give to you a joy that will only increase as your experience of it continues.

So conceived, biology will give to you its spiritual rewards—all you are likely to get out of it, anyway.

You will not be understood! Of course not!

You will puzzle and you will exasperate your family when you announce satisfaction with your status and your salary—even a depression salary!

But you will have remained true to the faith.

It is customary for the speaker in my place to exhort the novitiates to loyalty to the chapter, regular attendance upon the meetings. I decline to bow to such a precedent. There are some among you for whom this will be your first and last contact with the fraternity! We wish you well. There are others of you who will make known your adhesion to the society only at the initiation banquets. We shall be glad to see you. There are still others who will manifest an interest in Phi Sigma chiefly at election time, to push the candidacy of a friend, a fraternity brother, or a roommate. We shall try to bear with him. There are a few of you who will take an active concern in the affairs of the organization.

To each I extend a greeting.

Phi Sigma is large. It is becoming larger. It has room for all of you. It will give to each of you in proportion as you give to it.

A New Genus of the Anacardiaceae from Colombia

FRED A. BARKLEY*

The author is indebteded to Dr. E. P. Killip for the specimen on which this genus is based. It was sent with the notation that it might prove to be a new genus and this was borne out by a study of the specimen.

This tree grows in the dense forests in the mountains of Colombia. The pith is thick, similar to that of *Rhus*. The branches are densely puberulent, as are the leaves and inflorescences. The flowers have five persistent sepals, five caducous petals, five stamens, a prominent disk, and a tricarpellary pistil. The fruit is outstanding, being a samara-like drupe remindful of *Pseudomosmodingium* but bearing long violet-colored hairs similar to that of the fruit of *Actinocheita*, but limited to the margins of the fruit much as in *Heliocarus*.

It is known only from the type collection.

Ochoterenaea Barkley, gen. nov. Arbor; ramis crassis; foliis imparipinnatis; floribus multis in thyrsis ad terminos ramorum brevium lateralium; sepalis 5 persistentibus, petalis staminibusque 5, pistillo tricarpellato, carpello unico fertili; fructu planissimo, drupa, glabro margine longe pilosa except.

Tree, leaves imparipinnate; flowers many in thyrsi at the ends of short lateral branches; sepals 5 persistent, petals and stamens 5, disk prominent, pistil tricarpellary with one fertile carpel; fruit a very flattened drupe long pilose along the margin.

Type species: Ochoterenaea colombiana Barkley, sp. nov. Arbor ad 20 m.; ramis crassis; foliis imparipinnatis, foliolis 11-13, lanceolatis, integerrimis; ramis, foliis, thyrsisque pubescentibus; floribus multis in thyrsis ad terminous ramorum brevium lateralium; sepalis 5 persistentibus, petalis staminibusque 5, pistillo tricarpellato, carpello unico fertili; fructu planissimo drupa, glabro margine longe pilosa excepta.

Tree to 20 meters; branches thick; leaves about 45 cm. long, imparipinnate with 11-13 leaflets; leaflets entire, lanceolate, 11-18 cm. long, 4.5-6 cm. broad; branches, leaves and inflorescence densely puberulent; flowers many in thyrsi at the ends of short lateral branches; sepals 5, persistent, deltoid-ovate; petals 5, caducous, lanceolate; stamens 5; pistol tricarpellary with two abortive carpels; fruit a much flattened drupe, glabrous except for a region on and near the margin which is long pilose with violet hairs and except for a very few glandular hairs mostly limited to the margin.

Type: Killip 34772, dense forest, Rio Digua Valley, between La Elsa and Rio Blanco, department El Valle, Columbia, altitude 725 meters, April 2-5, 1939, in U. S. National Herbarium No. 1771563.

Specimens are deposited or will be distributed as follows: Ciencias Naturales, Bogota; British Museum, London; U. S. National Herbarium, Washington (two sheets); and in the author's Herbarium.

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*Reprinted from Bulletin of the Torrey Botanical Club 69(6):442-444 June, 1942.

James Leroy Kay*

By M. Graham Netting

The average layman is apt to think of a successful biologist as a timid, often doddering, and impractical individual. I know that this impression is current, for I have known museum carpenters who subscribed to an inviolable rule of never lending tools to anyone with a Ph.D. degree. Fortunately for those of us who are on the mechanically helpless side, there is the science of paleontology which numbers among its practitioners many very versatile men; men who know the idiosyncrasies of blasting gelatin as thoroughly as they know Hay's *Fossil Vertebrates of North America*; men who can handle a sixteen-pound sledge, a camel's-hair brush, or a geological map with equal facility. American paleontology has drawn colorful devotees from all walks of life, from Thomas Jefferson—who mistook the fossilized bones of a ground sloth for those of a gigantic lion, which he believed might still be existing (1799) in the mountains of West Virginia—to Edward Drinker Cope, the Quaker genius whose pen dripped wisdom and vitriol with equal ease. Many of the paleontologists went from the east to the great fossil hunting grounds of the west, like William Berryman Scott, who was hunting fossils on the Little Big Horn only a year after Custer's last stand. Some paleontologists, on the other hand, have come out of the west, after boyhoods spent in the arid regions where fossil turtles are more frequent than padded bricks as door stops. To this last group belongs James LeRoy Kay, who was born in the little town of Mona, Utah, on March 25, 1892. In Utah he spent his boyhood acquiring a knowledge of desert regions and horse trading, both of which were to stand him in good stead in later years.

It was actually a cartoon in a newspaper which initiated the long chain of events which culminated in Kay's receiving the honorary degree of Sc.D. at the University of Pittsburgh Commencement on April 26, 1942. According to legend, news of the discovery of the leg bones of a large sauropod dinasaur in Wyoming, at the turn of the century, was graphically illustrated by a cartoon in an eastern paper, showing a dinosaur standing on its hind legs and gazing into a fourth story window while traffic milled about its tail in the street below. Further, according to the tale, Andrew Carnegie wrote on the margin of this cartoon, "Dear Doctor: Buy this for Pittsburgh! A. C.," and forwarded it to the then director of the Carnegie Museum, Dr. William J. Holland. Although negotiations for this incomplete specimen came to naught, the Museum subsequently acquired and placed on exhibition the first specimen of *Diplodocus carnegiei* Hatcher, now world-famous because of the extensive distribution of replicas to the leading museums of the world. As the Museum's interest in paleontology broadened under the kindly ægis of Mr. Carnegie, various paleontologists were added to the staff. Kay became assistant to Earl Douglass, at what is now the Dinosaur

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*Member of Alpha Epsilon Chapter.

National Monument, Utah , in 1915, serving in this capacity until 1922, at which time he came to Pittsburgh as a full-time member of the staff. Since then he has spent virtually every summer in the field and nearly every winter in the laboratory. In addition to being one of the really great "bone" hunters of the country, Kay has proved that the principles of horse trading can be used in disposing of duplicate skeletons of huge dinosaurs, and the extensive and well-rounded collection of these animals now on display in the Carnegie Museum galleries will remain as permanent testimony to his skill in this art. It must not be inferred from these remarks that Kay's contributions have been wholly those of a collector in the field and in the basements of other museums. He has contributed materially to our knowledge of Tertiary formations, especially the Uinta and the Green River.

Every teacher who reads these remarks knows that a man's worth cannot be judged by the number of titles in his bibliography. In talks around the camp fire and on hikes over the Bad Lands and fossiliferous beds of the west, "Pop" Kay has taught more paleontology to neophytes than many a scientist has achieved through the medium of his publications. In presenting him for the Doctorate of Science, Dr. Andrey Avinoff, Director of the Carnegie Museum, stated, "As a mark of the high esteem in which Mr. Kay is held by his American colleagues, extinct animals from crocodile to camel, from mouse to 'monkey,' have been named in his honor. Unquestionably, the contributions of Mr. Kay to paleontology are of a significant and lasting order."

Future generations of students will know of Kay through the association of his name with the fossil vertebrates listed below, but those of us privileged to visit our first intermontane basins in his company have far warmer and more personal memories: his firm hands gripped on the steering wheel of a jouncing truck; his rolling gait through rabbit bush or over stony reg; and his irrepressible humor spicing an inimitable mixture of local anecdote, stratigraphic information, and paleontological history.

Hoplosuchus kayi Gilmore, a Jurassic reptile
Labidolemur kayi Simpson, a Paleocene primate
Leptotomus kayi Burke, an Eocene rodent.
Apataelurus kayi Scott, an Eocene creodont
Hassiacosuchus kayi Mook, an Eocene crocodilian.

* * *

W. A. Murrill, retired scientist

Dr. W. A. Murrill, a retired scientist formerly connected with the New York Botanical Gardens, has been working at the School of Forestry of the University of Florida. Dr. Newins and other Sigma Chapter members are interested in telling other Phi Sigma members what Dr. Murrill has achieved during the past year. He has devoted seventeen hours a day to botanical work without taking any vacation, sick-leave, or holidays. In addition to doing this regular work, he has found time to prepare the manuscripts listed below. Owing to the crowded condition of the herbarium considerable night-work was necessary. No assistance was available for mounting, labeling or letter-writing during this time.

The following lists give an idea of his work.

REGULAR WORK

1. Curating the Larger Fungi (Agarics, Polypores, etc.)
2. Research work on the Fungi
3. Taxonomic work on the Hawthorns
4. The Hawthorn Plantation
5. General collecting for the Herbarium
6. Additions to the Herbarium at the Yonge School
7. Management of the Gainesville Nature Club
8. Naming plants for the Dept. of Entomology, various Universities and many individuals
9. General Correspondence.

MANUSCRIPTS PREPARED

1. Florida Boletes
2. Florida Polypores
3. Florida Milkweeds
4. Florida Polygonaceae
5. Florida Asters
6. Florida Grasses
7. Florida Sedges
8. Dark-spored Agarics in Florida
9. Evergreen Woody Plants of Alachua County
10. The Rhinanthaceae of Alachua County
11. Woody Vines of Florida
12. Florida Sunflowers and Their Near Relatives
13. Florida Eriocaulales
14. The Cichroiaceae of Florida
15. Plant Communities of Alachua County
16. Florida Golden-Asters
17. Florida Blazing-Stars
18. Florida Cudweeds and Their Near Relatives
19. Florida Eupatoriums
20. Florida Goldenrods
21. Florida Hypericaceae
22. Florida Ericales
23. Florida Terrestrial Orchids
24. Florida Amaryllidales
25. Florida Liliales
26. Florida Carduales
27. Florida Amanilas
28. Florida Lactarias
29. Florida Collybias
30. Florida Marasmius
31. Florida Tricholemas
32. Florida Russulas
33. Florida Lepiotas
34. Fungous Diseases of Florida Forest Trees
35. Fungous Diseases of Florida Shade and Ornamental Trees
36. Florida Lamiaceae
37. Florida Polygalaceae
38. Ornamental Deciduous Shrubs of Alachua County.

Chapter News Letters

Eta

—University of Akron

Donald McGaughey, a pledge of June, 1941, was initiated into the chapter March 15, at a meeting at Lambda Chi Alpha house, at which time the following were pledged: Bartholomew Clemente, William Davis, Rae Dewey, George Duffey, Augustus Dycus, Rosemary Greenwald, Evelyn Mayers, DeEtta Pounds, and Evelyn Thigpen.

The last meeting of the year was an informal party at the home of Dr. and Mrs. Kraatz; thirty persons were present. Ruth Heppel, graduate assistant in Botany, and Augustus Dycus, a pledge, were initiated into the society, and Vincent Cianchetti was pledged.

At this meeting the Phi Sigma medal was presented to Richard Weaver for the unusual research interest, spirit, and initiative he has shown in working on the life history and ecology of the fairy shrimp.

Election of officers was postponed until fall. Richard Weaver will serve as president until fall when he will enter Navy Reserve Officer's training.

George Anastos, president, did some part time work for the Ohio Conservation Division at the local Portage Lakes during the late spring and summer. In July he left for the Great Lakes Hospital Corps School.

Robert Glasgow entered the Ohio State University medical school at the beginning of the summer quarter.

Richard Weaver was nature director at Camp Y-Noah, and Ruth Heppel at the local Girl Scout Camp, Ledgewood, during the summer.

Sergius Mamay and Earl Long were inducted into the army.

Alpha Epsilon

—University of Pittsburgh

Dr. Edna Higbee addressed the members of Alpha Epsilon at the fall meeting on "The Effect of Colchicine on Baby Chicks."

Additional members of Alpha Epsilon who have joined the armed services are Major Samuel H. Williams, A. F. DeWerth and Miss Eleanor Knight.

Major Samuel H. Williams, former University of Pittsburgh professor, is among a class of specialized trainees attending the Army Air Forces Technical Training Command School at Miami Beach, Fla. Upon completion of the six weeks' courses he will be assigned to direct vital administrative and supply operations of the army's rapidly expanding ground forces.

A. F. DeWerth, former Lecturer in Biology and Horticulturist at Phipps Conservatory, is in the twenty-sixth Engineers Training Battalion, Fort Leonard Wood, Missouri.

Miss Eleanor Knight is at Smith College taking four months' schooling for training as a Wave.

ELEANORE REED,
Corresponding Secretary.

Alpha Mu

—University and State College of Oregon

Alpha Mu Chapter initiated fifteen new members at the Corvallis Hotel, Wednesday, May 20, 1942. Those initiated were Dr. S. M. Zeller, plant pathologist, Agricultural Experiment Station, as an honorary member; Mr. Arthur S. Einarsen, Biologist, U. S. Fish and Wildlife Service, and Dr. H. A. Scullen, Associate Professor of Entomology, as faculty members; Fred Evenden, Roberta Winston, Mrs. Helen Fulton, Frank Turner, Donald Vogtman, Cecil Gubser, Lee Kuhn, Virgil Freed, Earle Meeker, Leland Seufert, and James Pitney as active members.

Election of officers followed the initiation ceremony. The incoming officers are: Fred Evenden, president; Mr. Arthur S. Einarsen, vice-president; Mrs. Helen Fulton, secretary, and Leland Seufert, treasurer.

The annual spring initiation banquet followed the business meeting. Dr. S.

M. Zeller, was honor guest. Mr. James Stovall of the Geology Department at the University of Oregon spoke on the "Natural Environment of Oregon from the Geographical Standpoint." He discussed the physiographic plus the climatic and vegetative factors in Oregon. From this discussion, we as biologists were able to see how the distribution of biological factors is made.

Melvin Cummings and Georgena Samson are to be complimented for their arrangements for the banquet. Dr. Stevenson proved a witty, stimulating master of ceremonies.

CLARA YOUNG,
Secretary.

Alpha Xi

—Rhode Island State

Alpha Xi Chapter installed the following officers for the coming year:

Morris Ostrach, president
Joan Sanders, vice-president
Helen M. Polis, Secretary
Malcolm Shurtleffs, Jr., treasurer
Helen G. Oakland, acting treasurer
Paul Barber, alumni secretary.

HELEN M. POLIS,
Secretary.

Alpha Omicron

—Marquette University

The new officers are:

Marian C. Dellers, president
Robert A. Bowman, vice-president
Dorothy E. Witheck, corresponding secretary
August J. Gillan, recording secretary
Hermann L. Karl, treasurer.

Highlighting a successful season of speaking programs, Dr. James Franck, professor of physics at the University of Chicago, and recipient of the Nobel prize of 1925, spoke on "Some Fundamental Aspects of Photosynthesis."

At the annual initiation banquet, Dr. Edgar End of the Marquette Medical School showed motion pictures of the diving experiments with helium that he and Max Nohl, well-known diver, conducted several years ago in Lake Michigan.

Activities for the year came to a close with an outdoor picnic at Grant Park.

DOROTHY E. WITHECK,
Corresponding Secretary.

Book Reviews

Except for the signed reviews, the thumbnail sketches of current biological literature appearing in this section are not meant to be exhaustive or deeply critical. They aim to survey the rapidly growing field of biology. Naturally these reviews represent the candid opinions of various readers not necessarily those of the National Council, nor even those of the Editor.

PROTOZOA IN BIOLOGICAL RESEARCH, edited by GARY N. CALKINS and FRANCIS M. SUMMERS, *Columbia University Press, New York, 1941. 1148 pages, 226 figures and 4 plates. Price $10.00.*

This volume is the work of several authors, all specialists in the field of protozoological research. Written for the purpose of stimulating research on the unicellular animals, it brings together the results of innumerable investigations covering the entire field. The book consists of twenty chapters, each (for the most part) written by a different author. Each author is a recognized authority in his own division of the field, and has summarized and woven together the principal results of investigation, including not only his own but that of others related to the same general topic.

Although there is some variation in degree of scholarly treatment, each chapter represents a convenient and generally thorough review of the work done along that line.

The volume is indispensable to those interested in and active in protozoological research. It is a valuable item which should be in every well-stocked zoological library. Summarizing, as it does, the vast amount of work which has been done in the field of protozoology up to the present, its value will undoubtedly become even more apparent as time goes on.

D. YOUNG.

THE BEGINNINGS OF SOCIAL BEHAVIOR IN UNICELLULAR ORGANISMS, HERBERT S. JENNINGS, *University of Pennsylvania Press, Philadelphia, 1941. 17 pages, $0.25.*

The lecture by this title was a Liedy Memorial Lecture delivered by Professor Jennings at the Bicentennial Conference of the University of Pennsylvania.

As the title indicates, the author sought to show that social behavior has its beginning among the unicellular organisms. He stated that the most deep-seated manifestations of social life are connected with mating and the family, and implied that these manifestations are as clear in the protozoa as in human beings. He then described what he called the courtship, mating, family life and social system of infusorians, drawing from his own observations and those of others on species of *Uroleptus*, *Euplotes* and especially *Paramecium*.

Coming from one of the foremost authorities on behavior among the unicellular organisms, this pamphlet should be especially interesting to students of social behavior at any level in the animal scale.

D. YOUNG.

A LABORATORY MANUAL IN ELEMENTARY ZOOLOGY, W. B. UNGER and C. E. MANTZ, *Quinn and Company; Boston, 1941, Price $1.25.*

This is a very direct and concise manual for the study of representative animals of nine phyla, beginning with the Protozoa and ending with the Chordata. The work is purely morphological, no physiology being included. There are exercises in embryology and histology. Characteristics of each phylum are listed at the beginning of the description of the animal illustrating that phylum. A preliminary list of terms will prove useful to the beginning student. The book is well adapted to those courses in which morphology is emphasized.

DIXIE YOUNG.

TEXTBOOK OF BACTERIOLOGY by the late Edwin O. Jordan and William Burrows. *13th. ed. XII + 731 pp. 170 figs. W. B. Saunders Company, Phila. and London, 1941. Price $6.00.*

This edition of Dr. Jordan's well-known text contains forty chapters dealing with all phases in the lives of bacteria and related organism. A short history of the subject, followed by a section of basic techniques, introduces the volume which then gives systematic digests of the subjects within its scope, with considerable emphasis on the applied phases of each. Medical and sanitary subjects receive much more expanded treatment than other phases of the subject in a manner suggestive of Wenyon's *Protozoology.* On the borderline among organisms or between the living and non-living (spirochetes, Rickettsiae, viruses, etc.) the discussions are adequate for an understanding of the fundamentals of situations; no one view is overstressed. Some will question the inclusion of a discussion of the Protozoa in a book of this title. Apparently the authors think that a strict logic is of less importance than usability for students of medicine and public health.

Figures, binding, and printing are excellent.

Arthur N. Bragg.

GENERAL BIOLOGY, James Watt Mavor, *rev. ed. XXX 897 pp. 490 figs. The Macmillan Company, N. Y., 1941. Price $6.00.*

As compared with the first edition, the second edition of this general text has been somewhat expanded and some materials rearranged. It has forty chapters which deal briefly (and often in some detail) with almost everything which can be called biological. Fossil organisms and the cultural beginnings of man are treated as well as the more usual aspect of biology. Animals are given a somewhat greater emphasis than plants although the viewpoint is biological, rather than zoological and botanical, throughout. An extensive table of contents, an appendix of classification, and an index are included. Chapters end with suggestive questions, the answers to all of which are to be found (or are suggested) in the text. Tables are numerous, figures clear and adequate, and the printing and binding well done.

This book will appeal strongly to those who believe that a first course in biology should be on a very broad basis of biological fundamentals. It will appeal much less to those who prefer a shorter course or who tend to emphasize differences, as opposed to similarities, between animals and plants.

Arthur N. Bragg.

PRINCIPLES OF ANTHROPOLOGY by Eliot Dismore Chapple and Carleton Stevens Coon. *Henry Holt and Company, 1942. Price $3.75.*

Your reviewer welcomes an occasional opportunity to read a book whose subject matter is just beyond the border of his field; the table of contents of this book was full of promise, and he anticipated with pleasure the hours to be spent in the preparation of a book on anthropology from the point of view of a biologist. That pleasure was short-lived. The multiplicity of minor (?) inaccuracies in those portions of the text devoted to the biological background of the subject could not be overlooked. In addition, evidences of hasty and careless composition and slovenly writing are to be found in every chapter. "When two Andaman Islanders meet, however, they sit in each other's lap and weep unrestrainedly." Try it some time!

A. O. Weese.

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